[0174] The reception delaying unit **1126** may include the beamformer **1125** of FIG. **13**. According to an exemplary embodiment, when the probe **20** is the 2D probe **100** or **700**, the beamformer **1125** may include a micro-beamformer corresponding to each sub-array.

[0175] The beamformer **1125** may include a first delaying unit configured to adjust phases of non-inverted signals and a second delaying unit configured to adjust phases of inverted signals.

[0176] Also, the beamformer **1125** may generate a first summing signal by summing non-inverted signals whose phases are adjusted by the first delaying unit and may generate a second summing signal by summing inverted signals whose phases are adjusted by the second delaying unit. Each of the first delaying unit and the second delaying unit may include, but is not limited to, a sample and hold circuit in order to obtain signals whose phases are adjusted. Also, the first delaying unit may include first capacitors respectively corresponding to first transducers of a first group and the second delaying unit may include second capacitors respectively corresponding to second transducers of a second group.

[0177] Also, the summing unit **1128** may include the differential amplifier **1127** of FIG. **13**. The ultrasound device **1000** may differentially amplify the first summing signal and the second summing signal by using the differential amplifier **1127**.

[0178] The image processor **1200** generates an ultrasound image by scan-converting ultrasound data generated by the ultrasound transceiver **1100**. The ultrasound image may be not only a grayscale ultrasound image obtained by scanning an object in an amplitude (A) mode, a brightness (B) mode, and a motion (M) mode, but also a Doppler image showing a movement of an object via a Doppler effect. The Doppler image may be a blood flow Doppler image showing flow of blood (also referred to as a color Doppler image), a tissue Doppler image showing a movement of tissue, or a spectral Doppler image showing a moving speed of an object as a waveform.

[0179] Also, when the ultrasound device **1000** includes a 2D probe, the image processor **1200** may generate an ultrasound image based on a beamforming signal corresponding to each of a plurality of sub-arrays.

[0180] A B mode processor **1212** extracts B mode components from ultrasound data and processes the B mode components. An image generator **1220** may generate an ultrasound image indicating signal intensities as brightness based on the extracted B mode components **1212**.

[0181] Similarly, a Doppler processor **1214** may extract Doppler components from ultrasound data, and the image generator **1220** may generate a Doppler image indicating a movement of an object as colors or waveforms based on the extracted Doppler components.

[0182] According to an exemplary embodiment, the image generator **1220** may generate a three-dimensional (3D) ultrasound image via volume-rendering with respect to volume data and may also generate an elasticity image by imaging deformation of the object **10** due to pressure. Furthermore, the image generator **1220** may display various pieces of additional information in an ultrasound image by using text and graphics. In addition, the generated ultrasound image may be stored in the memory **1500**.

[0183] The display **1400** displays the generated ultrasound image. The display **1400** may display not only an ultrasound image, but also various pieces of information processed by the ultrasound device **1000** on a screen image via a graphical user interface (GUI). In addition, the ultrasound device **1000** may include two or more displays **1400** according to embodiments.

[0184] The communication unit **1300** is connected to a network **30** by wire or wirelessly to communicate with an external device or a server. The communication unit **1300** may exchange data with a hospital server or another medical apparatus in a hospital, which is connected thereto via a PACS. Furthermore, the communication unit **1300** may perform data communication according to the digital imaging and communications in medicine (DICOM) standard.

[0185] The communication unit **1300** may transmit or receive data related to diagnosis of an object, e.g., an ultrasound image, ultrasound data, and Doppler data of the object, via the network **30** and may also transmit or receive medical images captured by another medical apparatus, e.g., a computed tomography (CT) apparatus, a magnetic resonance imaging (MRI) apparatus, or an X-ray apparatus. Furthermore, the communication unit **1300** may receive information about a diagnosis history or medical treatment schedule of a patient from a server and utilizes the received information to diagnose the patient. Furthermore, the communication unit **1300** may perform data communication not only with a server or a medical apparatus in a hospital, but also with a portable terminal of a medical doctor or patient.

[0186] The communication unit **1300** is connected to the network **30** by wire or wirelessly to exchange data with a server **32**, a medical apparatus **34**, or a portable terminal **36**. The communication unit **1300** may include one or more components for communication with external devices. For example, the communication unit **1300** may include a local area communication module **1310**, a wired communication module **1320**, and a mobile communication module **1330**.

[0187] The local area communication module **1310** refers to a module for local area communication within a predetermined distance. Examples of local area communication techniques according to an exemplary embodiment may include, but are not limited to, wireless LAN, Wi-Fi, Bluetooth, ZigBee, Wi-Fi Direct (WFD), ultra wideband (UWB), infrared data association (IrDA), Bluetooth low energy (BLE), and near field communication (NFC).

[0188] The wired communication module **1320** refers to a module for communication using electric signals or optical signals. Examples of wired communication techniques according to an exemplary embodiment may include communication via a twisted pair cable, a coaxial cable, an optical fiber cable, and an Ethernet cable.

[0189] The mobile communication module **1330** transmits or receives wireless signals to or from at least one selected from a base station, an external terminal, and a server on a mobile communication network. The wireless signals may be voice call signals, video call signals, or various types of data for transmission and reception of text/multimedia messages.

[0190] The memory **1500** stores various data processed by the ultrasound device **1000**. For example, the memory **1500** may store medical data related to diagnosis of an object, such as ultrasound data and an ultrasound image that are input or output, and may also store algorithms or programs which are to be executed in the ultrasound device **1000**.

[0191] The memory **1500** may be any of various storage media, e.g., a flash memory, a hard disk drive, EEPROM,